



Industrial Refrigeration Service, Inc.

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July 15, 2016

*Guardian Environmental Services, Inc.
70 Albe Drive
Newark, DE 19702*

Attn: Mr. Pete Johnson

RE: Vineland Ice and Cold Storage, Refrigeration System Assessment

Dear Mr. Johnson:

On Monday July 11, 2016, Industrial Refrigeration Service, Inc. was asked to perform a general assessment of the ammonia refrigeration system at the Vineland Ice and Cold Storage Facility in Vineland, New Jersey. The assessment was a visual only; pressure readings and levels were recorded.

It appears the plant was originally a block ice plant with a small area for ice storage. Over time, the Cold Storage Building was added. The refrigeration system is a single stage system, operating on two (2) separate suction temperatures.

The system was operating at the time of this report. The Mechanical Room consists of two (2) Frick RXB screw compressors; one Vilter 6 cylinder compressor, one (1) cold storage pump recirculation package, one (1) ice bank pump recirculation package, one (1) high pressure receiver, one (1) liquid injection pot, two (2) water-cooled condensers and one (1) ice bank chiller coil. The Cold Storage consists of multiple fan coil evaporators and bunker coils.

The Cold Storage system was originally all bunker coils. Over time, some of the coils have been abandoned and replaced with fan coil units with hot gas defrost. In general, the system is in need of maintenance. Frost and ice buildup on both the fan coil units and the bunker coils has consumed valve stations and room lights. The pump recirculation package is cycling the pump on low level.

The Ice Bank system was reported to be operational on July 4. At present, the system is in standby, with the water in the cans frozen, circulating pumps off and the recirculation package pumped out. It is likely the Ice Bank coil is full of liquid ammonia, as it is submerged in the brine tank.

The two (2) Frick compressors are running locally; the Vilter compressor is off and reported to be runnable, if needed. Condenser pumps are running. The level in the high pressure receiver was approximately 10".

Liquid ammonia levels were recorded on the vessels and the following refrigerant charge was estimated:

High Pressure Receiver: Level 10", 686 pounds.

Ice Bank Recirculator: Level 0", Pumped out 20 pounds.

Cold Storage Recirculator: Level 50%, 1,345 pounds.

Liquid Injection Pot: Level 80%, 88 pounds.

Ice Bank Chiller: Level 100%, 1,441 pounds.

Two (2) Condensers: 185 pounds.

With a 20% safety factor add in, the total charge is 4,167 pounds. This does not include the evaporator charge. If we assume an additional 1800 pounds for a "worst case scenario", this would bring the total to approximately 5,970 pounds.

The system piping is questionable in the area where it enters the ice bank. Insulation is in poor condition or not existent. Chances are, that after a detailed inspection, many portions of the facility will need repairs or need to be condemned.

It is our recommendation, based on the general condition of the facility, the lack of maintenance, poor documentation and code violations, that the entire ammonia charge be removed in order for a proper inspection to be performed (once the ice is cleared and the structure is confirmed to be safe).

I would like to thank you for allowing Industrial Refrigeration Service, Inc. the opportunity of working with you on this project. I do hope that the information as presented here meets with your approval. However, if you have any questions, please feel free to contact me.

Sincerely,

*INDUSTRIAL REFRIGERATION
SERVICE, INC.*

A handwritten signature in black ink, appearing to read "Tim Herbert", with a long horizontal flourish extending to the right.

*Tim Herbert
Operations Manager*

TH/dd